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USSR Report

TRANSPORTATION

No. 10

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AIR

BRIEFS

RADAR IMPROVEMENT--Radars presently existing at civil aviation airports will be operating better. They now will begin to be equipped with a special interference elimination unit in place of the previously used asynchronous interference suppression filters. The new device considerably improves the stability of the station's operation, provides for flight safety, and the economic effect of the innovation's adoption will be 320,000 rubles per year. The device was developed by rationalizers--a group of engineers of the Scientific Test Center for Automation of Air Traffic Control and the Moscow Transportation Directorate. [Text]
[Moscow VOZDUSHNYY TRANSPORT in Russian 20 Nov 79 p 3] 6904

POLISH AN-28--Warsaw, TASS--The collective of a transportation equipment plant in the city of Mielec began preparations for series production of the new AN-28 passenger aircraft built by the collective of Soviet aviation designer O. K. Antonov. The aircraft can take 18 passengers aboard and its flight range is 650 km. It is capable of landing on small dirt strips, which makes it very suitable for local airlines. The transfer of documentation and equipment for production of the AN-28 to the Mielec specialists is an example of the high level of Soviet-Polish technical cooperation, which began in the first postwar years. At the beginning of the 1960's the plant collective began production of the famous AN-2's with the assistance of Soviet aircraft builders. The AN-2 today can be seen in all CEMA member countries. The joint development and initiation of production of the first jet agricultural aircraft in the world, the M-15, was a new phase in Soviet-Polish cooperation. The enterprise in Mielec now produces some assemblies for Soviet Il-86 airliners. [Text]
[Moscow VOZDUSHNYY TRANSPORT in Russian 12 Jun 79 p 3] 6904

ANTARCTIC RESEARCH FLIGHT--Aboard aircraft Il-18D No 74267, 10 Feb, special PRAVDA correspondent P. Barashev--This craft stands out in its external appearance among the aircraft painted the conventional white and blue colors of Aeroflot. Bright red strips on the fuselage and bright red wings give the aircraft an unusual appearance. It is to travel to the shores of the Antarctic, where Soviet scientists are performing research. Among those departing for the Antarctic is Iero SU Ye. Tolstikov, deputy chairman of the State Committee for Meteorology and Environmental Control, polar specialists and scientists. They are to make a long trip and test an airfield at Molodezhnaya Station in order to open regular flights over the Moscow-Antarctic route. The aircraft taxis onto the take-off strip. It took off from Moscow at 1230 hours to land at Molodezhnaya after covering 15,992 km. [Text] [Moscow PRAVDA in Russian 11 Feb 80 p 1] 6904

NEW PASSENGER ROUTE--Kyzyl, M. Babintsev--Local pilots have extended a new route to Todzhu, the most distant taiga region of Tuva. A swept-wing aircraft made a landing for the first time in the village of Toora-kheme. For now it is making technical runs, but it will begin to deliver passengers in the near future. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 22 Dec 79 p 4] 6904

AVIATION REPAIR PLANT--Mineral'nyye Vody, Stavropol'skiy Kray, 19 Nov, PRAVDA correspondent V. Pankratov--The first Tu-154 aircraft arrived at a local aviation repair plant. Until recently the enterprise had restored only the Yak-40 jets and Mi-2 helicopters. Its profile now has become broader thanks to the efforts of the entire collective. A special dock has been built capable of accepting the Tu-154. A set of various floors, superstructures and stands allows approaching any point of the aircraft, the highest of which is situated at the 11.5 m mark from the ground. A new shop also has been set up for repair of large airliners. A large group of repairmen performed OJT at enterprises producing these aircraft and studied the experience of the collective of the Vnukovo Aviation Repair Plant, which until now had "treated" the Tu-154's by itself. [Text] [Moscow PRAVDA in Russian 20 Nov 79 p 1] 6904

BARENTS SEA WEATHER AIRCRAFT--Murmansk, 19 Nov, nonregular PRAVDA correspondent A. Khramtsov--Weather service personnel now have begun to receive prompt hydrometeorological data from various parts of the Barents Sea. The information is coming from aboard an ice reconnaissance aircraft--an Il-14 of the Arkhangel'sk Civil Aviation Administration. Specialists of the Murmansk Territorial Directorate for Hydrometeorology and Protection of the Air Environment are participating in the air expeditions. The flying laboratory's routes pass over five air routes intersecting the entire water area of the Barents Sea. [Text] [Moscow PRAVDA in Russian 20 Nov 79 p 6] 6904

KHABAROVSK-ROSTOV AIR ROUTE--Khabarovsk--Pilots have plotted a new Khabarovsk-Rostov-na-Donu air route on the maps. A detailed study of passenger flows by workers of the Far East Civil Aviation Administration helped open the route. Khabarovsk now is linked with 60 cities of the country by air traffic. Passenger travel has exceeded four million persons annually. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 8 Jan 80 p 1] 6904

FRUNZE-TALAS AIR ROUTE--Kirgiz SSR, Yu. Mushtakov--The swept-wing Yak-40 has made the first technical flights from Frunze, the capital of Kirgizia, to Talas. This will mark the beginning of regular flights by aircraft of this class. Prior to this air communications between the Republic capital and the remote Talas Valley was accomplished by the slow An-2 workhorses. For this reason it was decided to build a new runway in Talas. The construction was completed successfully. The strip received high praise from A. Bagobylov, the aircraft commander who made the first flight, and other specialists. [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 27 Nov 79 p 2] 6904

MOSCOW-ANADYR' AIR ROUTE--Anadyr', Magadanskaya Oblast--A Tu-154 aircraft which made the first regular trip from Moscow made a landing at the local airport. From now on the new, comfortable airliners will service this air route, one of the longest in the country. The Tu-154 is a roomier and faster aircraft than those used on this route until now. It will make it noticeably easier for the residents of Chukotka to have ties with the center of the country. The number of trips between Moscow and Anadyr' will rise with the arrival of summer. New aviation equipment is taking to the air roads more and more. While last year the Il-62, Tu-154 and Tu-134 aircraft performed 54 percent of all trips, this year they will already be performing 63 percent. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 5 Jan 80 p 1] 6904

CSO: 1829

MOTOR VEHICLE

MORE EFFICIENT CONTAINER USE IN LATVIAN SSR ADVOCATED

Riga SOVETSKAYA LATVIYA in Russian 26 Mar 80 p 2

[Article by Yu. Poteryayev, head of the Container Transport Division of the Latvian SSR: Ministry of Motor Vehicle Transport and Highways
"Where the Containers are 'Stumbling'"]

[Text] It is hardly necessary today to prove to anyone the advantages of containers. There has been sufficient time to be persuaded of their advantages was sufficient for us as motor vehicle workers and for many of our clients; and, this form of transport has already been in use in the republic for more than 10 years.

During this period the volume of container transport has increased almost by a factor of 10. Today they are utilized by more than 200 enterprises in the republic. Experience has shown that through the use of multipurpose containers the delivery of freight has been speeded up an average of 25 to 30 percent and the productivity of loading and unloading operations has grown by a factor of 5. In addition, the construction of open areas for container storage is significantly less expensive than the construction of warehouses. Moreover, losses due to freight damage during transport are sharply reduced.

But this effect could be even greater. The problem is that the container which is advantageous and convenient in all respects encounters many obstacles in its path and often "stumbles" into potholes either of organizational messes or of basic poor management.

Let us examine, for example, the shipping point of the trade administration of the Liyepayskiy ispolkon. At the end of February 46 containers were accumulated here, which was nearly 4 times more than normal. Many of them had been standing there for a month even though each is allowed to be kept no more than 24 hours. A similar situation can also be observed at the shipping point of the trade administration of the Yelgavskiy ispolkon.

A great deal of time is lost due to poorly organized container loading and unloading at motor transport clients. This refers chiefly to the Riga Wine and Champagne Combine, the production association "Radiotekhnika" and to the shipping points of the State Committee for Material and Technical Supply in the republic.

The irregularity in the operations of several container areas also lowers the transport efficiency. One of these in Riga is particularly "distinguished" for this, namely, the container area located at 72 Tereshkovaya Street which serves several trade centers. Usually at the beginning of the month the motor vehicle workers receive very few orders for containers and vehicles from this area and then at the end of the month they pour in as if from a horn of plenty. It is simply impossible to fill all these orders in this situation.

We could organize container transport between many enterprises which are linked through shipments of products under subcontracting arrangements. Take, for example, the Riga association "Sarkanays kvadrats" and the Rezeknenskiy Milking Machine Plant. The Rezeknenskiy workers are utilizing an advanced method for shipping their products and would willingly accept further components for it from suppliers, in particular from the association "Sarkanays kvadrats," packaged in containers. However, for various reasons the managers of the Riga enterprise avoid introducing such a method of transport.

Unfortunately it is possible to cite many such examples. It is not difficult to explain the position of the economists in this situation. Anything new means additional concerns, problems and expenses. So why bring them on oneself if it is more tranquil working in the old manner. And they are only recalled suddenly at some enterprise when packaging materials begin to be in short supply or when other complications arise in the shipment of products. Then the managers remember about container transport and rush to their more enterprising and farsighted colleagues for their experience.

And it turns out that there are those who have organized it in the republic. This effective method of transport has been in use successfully for some time in the production associations VEF (Riga Order of Lenin State Electrotechnical Plant imeni V. I. Lenin), "Sarkanays rits," "Rigas manufaktura," in the shoe combine "Daugava" and in the Valmiyerskiy fiber glass combine. Here the process of loading and unloading containers is well thought out and precisely organized, and, as a rule, there are no delays in receiving and shipping them.

It is necessary to transfer the experience of these enterprises. Due to late processing freight sits at both the receivers and shippers and thus hundreds of motor transport containers are removed for long periods from use. There are insufficient numbers of them in the republic without this problem.

The shortage of containers, particularly those with low capacities, is yet another problem which is seriously affecting the development of this advanced method of transport. We are attempting to correct this matter. We are manufacturing containers at motor vehicle repair enterprises. However, we cannot make up for the shortage; we are allotted an extremely small amount of metal.

At the same time the fact that the number of containers is increasing, there must also be concern for the construction of special mechanized processing areas and convenient access roads. Seven general use container areas are operating in the republic today as well as 55 departmental areas. However, this is very few and more should be built, especially for such clients as Latpotrebsoyuz (Latvian Republic Union of Consumers' Societies) where there is only one container area for a large volume of motor vehicle transport.

The use of large, 20-ton containers promises great advantages. Their utilization has made it possible to begin regular motor transport lines connecting Riga with Leningrad, Tallin and Moscow. Freight is delivered to these cities strictly according to a schedule. It is a pity that the capacity of these large containers is only half utilized in these shipments. The basic cause of this is the lack of a sufficiently powerful machine at the Riga motor vehicle terminal for loading and unloading them.

Much remains to be done in solving these problems. The first steps must be taken, of course, by us, the motor vehicle workers. In particular, we must organize stricter accounting and control over the movement of containers and uninterrupted vehicle operation on the lines. More attention must be devoted to improving container transport equipment and to raising the effectiveness of rolling stock utilization.

However, it is possible to achieve success in this only on the condition that those working with us on the transport conveyor, all the ministries and departments on which the development of advanced container transport depends, provide us with intensive and active support.

11,220
CSO: 1829

RAILROAD

FIRST QUARTER 1980 RAILROAD PERFORMANCE FIGURES

Moscow GUDOK in Russian 23 Apr 80 pp 1, 2

[Article based on materials of the Finance and Statistical Accounting Administration of the Ministry of Railways: "To Increase Rail Traffic"]

[Text] With a high sense of responsibility the rail system workers acknowledged the decisions of the November (1979) CPSU Central Committee Plenum, Comrade L. I. Brezhnev's instructions on the improvement of the operation of rail transport, the mission of which is to satisfy the transport needs of the economy and populace in a fuller and more timely fashion.

Having initiated across-the-board socialist competition for the worthy celebration of the 110th anniversary of V. I. Lenin's birth, the rail workers in the first quarter of 1980 have overfulfilled the freight and passenger traffic plan, met the target for growth in labor productivity and achieved some improvement in the utilization of rolling stock.

As much as 914.4 million tons of freight--3.4 million tons above the plan target--was transported. As compared with the same period last year, freight haulage increased to 44.9 million tons, or by 5.2 percent. The growth in the transport of petroleum and petroleum products totalled 4.4 million tons; ore--4.5; chemical and mineral fertilizers--3.6; ferrous metals--2.1; lumber--4.8; cement--2.6 and industrial raw materials--2.3 million tons. On the other hand, the volume of transport of such an important item as hard coal dropped by 1.1 million tons.

Twenty-three railroads overfulfilled the total haulage plan. The best performance was given by the workers of the Moscow, Belorussian, Northern Severnaya, Southwestern Yugo-Zapadnaya, Odessa, L'vov, Southern, Privolzhskaya, Southeastern, Tselinnaya, Central Asian, Sverdlovsk, South-Ural and Trans-Baykal Railroads. The Donetsk, Eastern Siberia, Pridneprovskaya, Kemerovo, Krasnoyarsk and Far Eastern Railroads fell considerably short of plan fulfillment. The ore transport situation on these railroads is also unfavorable. The Kemerovo Railroad fell 4.6 million tons of coal short of its target, the Donetsk--almost 1.9 and the Tselinnaya 0.9 million tons. The Eastern Siberian Railroad underfulfilled the haulage plan by 1 million

tons, including 1.3 million tons of timber, 142,000 tons of petroleum and petroleum products, 106,000 tons of ore and 40,000 tons of coke. Failure to meet targets on a number of railroads resulted in a shift of the burden to others.

The level of unit-train dispatching equaled 45.9 percent. This represented a 1.3 percent increase over the first quarter of 1979. For specific important mass items it totaled: iron and manganese ore--91.8 percent; petroleum and petroleum products--77.8; shales--78.4; coal--69.3; fluxes--74.0 and coke 62.3. The dispatching of shipments in unit trains increased on the vast majority of railroads.

The use of weight and volume capacity of railroad cars has improved. The static load increased by 300 kg compared with the same period last year. This made it possible to handle the loading of 5.4 million tons of freight without the need for additional cars. The static load has increased for the haulage of most mass freight items, including coal--by 0.33 tons; iron and manganese ore--by 0.19; peat--by 0.97; petroleum and petroleum products--by 0.24; mineral fertilizers--by 0.81, shales--by 0.34; grain--by 1.17; and so forth.

Twelve railroads failed to fulfill the static-load target, the worst performance being given by the Western Siberian, Tselinnaya, Kemerovo, Donetsk and Southern Ural Railroads. This resulted in an overall system-wide underfulfillment of this indicator.

Compared with the first quarter of last year the daily unloading rate increased by almost 6,000 cars. However, the plan was not fulfilled on the majority of railroads, their subdivisions and for the rail system as a whole; although, many railroads and subdivisions had available to them a considerable surplus of cars engaged in local hauling.

Freight traffic totaled 842.8 billion ton-kilometers. This is 0.8 percent over the target. Freight traffic increased by almost 61 billion ton-kilometers, or by 7.8 percent compared with the same period last year. Furthermore, 63 percent of the increase came from increased traffic volume. The freight traffic on the Donetsk, Azerbaijan and Northern Caucasus Railroads decreased.

The average haulage distance increased by 23 kilometers. It rose considerably for the transport of coal, ore, fertilizers, cement, refractory materials, grain and some other items. On the other hand, the average haulage distance for granulated slag, mixed feed, timber and so forth decreased.

Compared with the first quarter of 1979, passenger traffic increased by 2 billion passenger-kilometers, or by 3.1 percent. The plan target for this indicator was overfulfilled by 0.4 percent.

Guided by order No 30Ts, the work collectives of a number of railroads mobilized their reserves and achieved improved utilization of the rolling stock and increased the level of all operations.

Compared with the first quarter of 1970, the volume of freight transferred from one railroad to another increased by 12,200 cars. However, it must be said that the transport of transit cars on the Azerbaijan Railroad and those of Siberia and the Far East was unsatisfactory.

The average daily locomotive productivity on the majority of railroads and for the system as a whole increased. Sixteen railroads, first and foremost the Moscow, Gor'kiy, Southwestern, Odessa, Southeastern, Privolzhskaya, Western Kazakhstan and Sverdlovsk Railroads met the targets for this indicator. But on the Northern Caucasus, Azerbaijan, Donetsk, Teelinaya, Central Asian, Krasnoyarsk and Eastern Siberian Railroads not only was the plan not fulfilled, but the utilization of locomotives worsened as compared with the same period last year.

The introduction of more powerful locomotives, beefing up maintenance-of-way work and other services, reduction in the number of less-than-full-weight trains and most importantly, the dissemination of the Moscow Railroad's positive experience resulted in a 31-ton increase in the average weight of a freight train compared with the same period last year. This figure increased considerably on the Moscow, Western Siberian, Southwestern, Kemerovo, Belorussian, Trans-Baykal, Far Eastern Railroads and a number of others.

The use of freight cars has somewhat improved. Their turn-around time has improved by 3.2 percent. Time devoted to loading operations has been reduced by 5.9 percent and time at maintenance facilities by 4.6 percent. Productivity increased by 3.2 percent. The Moscow, Western Kazakhstan and Odessa Railroads met the targets for car turn-around time and average daily productivity. The Pridneprovskaya Railroad fulfilled the car productivity target, and the Moldavian Railroad met the turn-around time target. However, due to difficulties in maintaining car traffic volume, increases in transport distances, and as a result of the growth in fully-loaded runs, the established targets for car-utilization primary indicators was not fulfilled entirely on a systemwide basis.

The timetable for passenger and freight trains was more closely adhered to than in the first quarter of last year. Freight trains running on schedule increased by 0.8 percent and passenger trains by 2.4 percent. Nonetheless, the L'vov, Moldavian, Odessa, Southern, Pridneprovskaya, Northern Caucasus, Azerbaijan, Trans-Caucasus Zakavkazskaya, Alma-Ata Railroads and those of Siberia and the Far East are paying insufficient attention to meeting established schedules.

The material-technical base of the rail transport system has been further developed. Compared with the same period last year, the planned rate of capital construction in the first quarter of 1980 increased by 6.4 percent. Greater progress in assimilating new capital investment was made at production facilities. Construction on the Southwestern, Belorussian, Moscow, Donetsk, Odessa, Teelinaya and Central Asian Railroads is having the

greatest success. However, the organizations of the Ministry of Railway Construction are dragging their feet in plan fulfillment on such railroads as the Eastern Siberian, Western Kazakhstan, Privolzhskaya, Krasnoyarsk, Southern Ural and Moldavian Railroads. The reduction in the assimilation of capital investment at nonproduction facilities is of considerable concern.

The replenishment of the rolling-stock fleet has continued. In the quarter the rail system received 125 electric locomotives, 292 diesel locomotives, 16,800 freight cars, 693 passenger cars and 13,700 containers.

The industrial enterprises of the Ministry of Railways overfulfilled the plan target for the sale of products and the production of the majority of the items specified by the economic plan's product assortment. The volume of goods sold equaled 492.5 million rubles. This represents a 0.6 percent increase over the plan level and a 3.9 percent increase over last year's level. Almost 3 million rubles worth of products over the plan level was sold. Plants engaged in the repair of rolling stock and production of spare parts overfulfilled the plan by 3.15 million rubles. On the other hand, 5 plants of the ToTVR (not further expanded) did not meet their targets. The assigned volume of repair work for rolling stock and traction motors was not performed by the Astrakhan' and Zhmerinka plants. The plan for plant repair of locomotives remained unfulfilled throughout the Ministry of Railways system. A lag totalling 15 diesel locomotive sections has occurred at the Orenburg, Poltava and Tashkent plants. The railroads did not receive 46 passenger cars due to the poor performance of the Alma-Ata, Zhmerinka and Ordzhonikidze repair plants.

It is pleasing that the most important economic indicators improved in the first quarter. Compared to the same period in 1979, labor productivity of the system workers engaged in rail operations increased by 5.9 percent; the target was overfulfilled by 1.9 percent. Nonetheless, on a number of railroads the normal ratio of growth in wages vis-a-vis labor productivity has been violated.

In reviewing the results of the fulfillment of the national-level State Plan for Economic and Social Development for the first quarter, the USSR Council of Ministers noted that serious problems continue in rail transport operations. The dynamic development of our economy clearly requires across-the-board increases in the volume of rail transport. Therefore, it is very important to make an in-depth, comprehensive and critical study everywhere of the results of work in the first quarter in order to more quickly eliminate shortcomings and make more vigorous use of internal revenue.

There is no doubt that in broadening socialist competition and creative initiative and in applying progressive experience on a broad basis, rail-system workers will more completely and effectively satisfy the economy's and the populace's transport needs in this year of the 110th anniversary of V. I. Lenin's birth and will gladden their homeland with great labor achievements.

RAILROAD

BAM PROGRAMS REPORT, ACHIEVEMENTS SUMMARIZED

Moscow EKONOMICHESKAYA GAZETA in Russian No 16, Apr 80 p 1

[Article: "The Baykal-Amur RR Main Line"]

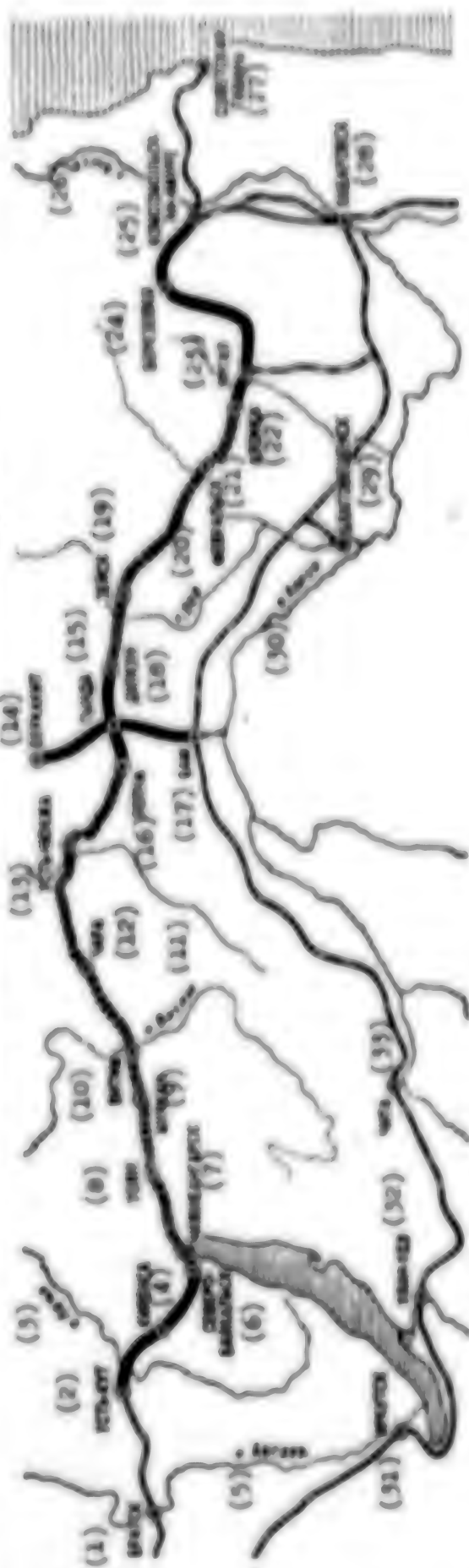
[Text] L. I. Brezhnev has noted the unprecedented sweep of work on laying the tracks for BAM, which has already become legendary. By this time BAM is already proving itself to be a mighty accelerator in the social-and-cultural transformation of vast territories in which no roots have been struck and it has immense significance in the development of the productive forces of Siberia and the Far East. The threads of rail will stretch to meet each other from Baykal to the east and from the Amur to the west.

The following figures speak eloquently of the grandiose scale of construction of this main line: during the four years of the five-year plan nearly 300 million cubic meters of soil have been moved elsewhere, more than 2,600 km of motor vehicle roads alongside the railway route and more than 2,000 km of railway track have been laid and 1,700 bridges and other man-made structures have been erected. The cities of Tynda, Severobaykal'sk and Ural and new settlements have sprouted in the taiga. Residential houses with a total living space of more than 300,000 square meters have been turned over for operation. Dozens of schools, hospitals, children's preschool institutions and facilities for trade, public catering and everyday services purposes have been built.

Carrying out the tasks outlined by the 25th Party Congress, the builders of the Baykal-Amur RR Main Line in 1979 completed the construction of the 220-km Tynda-Berkakit railway line. By handing it over for continuous operation, they have concluded the construction of the so-called little BAM, which consists of a meridional section to the Southern Yakutiya Coal Complex and to the one-of-a-kind Neryungrinskoye Deposit of Coking Coal. More than two million tons of fuel will be hauled out from Neryungrya along this line during the current year alone.

Work on the basic main line has been extended along a wide front. The steel track has come into the north of the Buryatskaya ASSR and into Severobaykal'sk. More than 180 km of railway track have been laid from Tynda to the west. A major victory was won last year by the builders of the Eastern Section in

НОВОСТРОЙКИ ЛЯПЛЕЯТКИ



Key:

1. Brucak
2. Ust'-Kut
3. Lena River
4. Karama
5. Angara River
6. Severchaykal'ch
7. Kishinengarsk
8. Uryan
9. Muzhkan
10. Vichin
11. Vichin River
12. Chara
13. Ust'-Nyuksha
14. Berkhait
15. Tynda
16. Lopycha
17. BAN

18. Diphun
19. Zayuk
20. Zaya River
21. Fervat'ch
22. Alomba
23. Uryal
24. Beraroka
25. Komomol'ch-qa-Amuro
26. Amur River
27. Sovetskaya Gavan'
28. Khokhrovsk
29. Blagoveshchensk
30. Amur River
31. Irkutsk
32. Ulan-Ude
33. Chita



- (Above) A railway consist is traveling across a new bridge over the Kovanta River on the Central Section of BAM.
- (Below) Tynda, the capital of BAM, is being transformed into a large and modern city.

Khabarovskiy Krai. The laying of the main track was concluded ahead-of-schedule and regular traffic by trains has been opened up a year earlier than the established deadline along the 500-km stretch from the Urgal station to Kosomol'ski-na-Amure.

Having given their support to the patriotic initiative bearing the slogan, "If we build ahead of schedule, then we will get things going ahead of schedule," the builders of BAM are concentrating their efforts on the reduction of the periods of time required for making new sections of the main line operational. Freight trains carrying building materials and equipment and coming back loaded with timber materials and coal are following in the footsteps of the track-laying machines. At the present time, operating traffic by trains and temporary operations are being carried out along sections of the main line having a total length of more than 1,100 km. Tens of millions of tons of freight have been hauled along them.

The rate of construction is increasing annually. We are faced during this Lenin anniversary year with implementing construction and installation work in a volume amounting to 24.1 percent more than was done in 1979.

Socialist competition to provide a worthy welcome for the 110th anniversary of the birthday of V. I. Lenin has spread widely among the builders of the main line. Each collective is getting its labor gifts ready for this date. More than 3,000 workers, 160 brigades and sections and more than 20 collectives of construction organizations have already completed their five-year plans.

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OSO: 1879

RAILROAD

DEVELOPING THE BAM ZONE

Moscow SOVETSKAYA ROSSIYA in Russian 14 Nov 79 p 1

[Article: "The BAM at the Operational Stage"]

[Excerpt] The realization of a program of economic development for the BAM zone demands three to four times the expenditures required for building the line itself. Thorough scientific design preparation, an economic basis for the siting, priority and construction times for plants, the creation of the necessary industrial and social infrastructure and measures for the protection of the environment are necessary in order that each ruble or, as is more accurate to say in keeping with the scale of the work ahead, each million rubles be utilized here effectively. Of course, such business organization which would provide for an inherent realization of scientific ideas and developments would rule out deviations from the plans for social and economic development due to the wishes of a particular industry or because of departmental or seniority aspirations.

The scientific approach to the development of the BAM zone is now being carried out at a number of academic institutes whose activities are coordinated by a scientific council on BAM problems. The council was created within the AN SSSR. Within the system of planning agencies the problem is being undertaken by the Council for the Study of Productive Forces attached to the Gosplan RSFSR, the Central Scientific Research Economic Institute of the Gosplan RSFSR and the design institutes of the ministries and departments. Detailed prospecting for mineral deposits and surveying of forest tracts is being conducted in all the vast expanses along the route. The natural climatic conditions are under investigation and sites are being selected for future enterprises and cities.

In this work it is extremely important to insure a rigid combination of the sector, territorial, industrial and social as-

ports and to avoid discord. Unfortunately, we have already encountered this. While drawing up plans for the development of a construction supplies and equipment base in Chitinskaya oblast, the Second Design Institute of the USSR State Committee for Construction Affairs left a "blank space" in the region of the Chitinskiy industrial center. They had not made provisions for a single construction base facility there. Moreover, the plan was intended for the next ten years! The start of development of the copper deposits in Udokan falls right in that period. It is necessary to know today which construction units will be working at the deposit itself and which units will support them in the southern regions of the oblast. This is a basic question. The participation of the populated southern regions of Siberia and the Far Eastern regions in the formation of the BAM belt is assumed to be necessary in all the scientific recommendations. It is strange that the project designers did not "encounter" these recommendations.

Today none of the economic managers need to be convinced of the necessity of immediate concern for the creation of normal vital activities for the people--living conditions, to begin with--in regions of new construction. According to what they say, they are all for it. However, when it gets down to the construction of the Southern Yakutsk Territorial Industrial Complex, its two general developers--Minugleprom and Minenergo--carried on negotiations for two years as to who would build the housing construction combine. It was put in only last year, when an acute shortage of working personnel had already developed at the complex's construction sites.

The advance creation of the housing construction base is a necessary condition for the formation of all planned territorial industrial complexes in the zone. The "tent-housing" period in the development of new territories is long past. Today's builder and his family, having traveled to distant lands, certainly expect to find comfortable living conditions.

During the preparation and development of the BAM zone, questions about the construction of communal facilities for the new settlers and the development of domestic services merit particular attention. In this case the strictest calculations are necessary. In order to attract and retain the working personnel in this region it is necessary to improve the service standards. Meanwhile, in the oblasts and republics attached to the BAM, the per-capita demand for services is 30 percent lower than in the central regions.

From the very outset all the work on the development of the BAM zone must be permeated with concern for the protection of the environment.

A number of serious tasks associated with the solution of social and economic problems in this region have been put before the republic ministries and departments of the Russian Federation, the Councils of Ministers of the autonomous republics and executive committees of the Councils of People's Deputies in those regions adjacent to the BAM. For example, the RSFSR Gosstroy was entrusted with the task of developing a complex territorial scheme for the protection of the environment in the BAM zone; of creating standard designs for housing, social, cultural and domestic projects that meet with local environmental and climatic requirements; and of creating over-all plans for cities to be built along the main line. Already this year the RSFSR Ministry of Agriculture, other departments involved in agriculture and scientific institutes in the republic are obliged to present economically based proposals for the development of agricultural production in these regions for the period up to 1990. Provisions have also been made here for a number of measures designed to insure the operation of transportation, the production of building materials, the delivery of petroleum products and the organization of trade and domestic services for the population.

The circle of problems which is presented by the program of economic development in the BAM zone is broad, and the solution to these problems demands a complex approach. Speaking before voters in June, 1975, Comrade L. I. Brezhnev emphasized: "The scale of this work on the BAM underscores with particular force the necessity of competently approaching all problems in this great construction and of deciding the current problems not under the influence of the spontaneous flow of events, but rather proceeding from precise, scientifically based concepts about the future promise of the complex development of this broad region." Competently! This must constantly be borne in mind by workers of the ministries and departments who have been entrusted with this task, as well as by both the party and the Soviet agencies in these places. This must be done not only in the BAM zone but also in all industrial and scientific centers where there are collectives involved in this most important economic program.

9512
CSO: 1829

RAILROAD

BRIEFS

OMSK-BARNAUL LINE ELECTRIFICATION--Omsk--The lead section of the 750 km Omsk-Barnaul railway, now being converted to electric traction, has been put into operation. The electrification of the main line will make it possible to increase by a factor of three its traffic-handling capacity and the passage of ever-increasing streams of grain, metal and coal. [Text] [Moscow TRUD in Russian 1 Jan 80 p 1] 9512

SYNYA-USINSK LINE INAUGURATION--Usinsk, Komi ASSP--The first work train with freight for new northern construction sites arrived at the Usinsk railway station. Operational traffic has been inaugurated along the entire line. The length of the new Synya-Utinsk line, which begins at the operational Kotlas-Vorkuta main line, is not very great--only a few hundred kilometers. The line has been laid under complex conditions. It had been necessary to build 20 large-scale bridges along the line. Despite the freezing weather, flash floods and complex geological conditions, the line was constructed in reduced time--the advance party of builders set down here at the end of the last Five-Year Plan. The new line is of great significance in the development of our country's large oil region. From here the steel rails will be laid farther--to Nar'yan-Mar. [Text] [Moscow IZVESTIYA in Russian 20 Dec 79 p 1] 9512

HEAVYWEIGHT TRAINS--Shunters of the Lozov station brigade headed by B. P. Kravchenko were given the right to marshal the 8000th heavyweight train this year. This collective initiated the introduction of the Moscow method of rapid freight delivery through the use of "heavy loaders" on the Southern Line. This has allowed them to increase the station's traffic-handling capacity by a factor of one and a half. Marshaling of heavyweight trains is now going on according to previously established diagrams. The majority of local engineers have mastered driving these trains. As a result, they have achieved a savings of several thousand kilowatt hours

of electric power and a considerable amount of fuel. The rail workers have concluded an agreement on creative cooperation with their colleagues on the neighboring Donetsk line. One of the points in this document has already been put into practice successfully: only "heavy-loaders" run on the Lozov-Aleksandrovka section. Using the Moscow method, the Lozov workers will transport more than a million tons of freight over and above the plan. In order that the method of these front-rank workers can become the property of all, the best locomotive engineers and specialists from signal and communications services headed up trade schools in which these progressive work methods are advocated. [Text] [Kiev PRAVDA UKRAINY in Russian 22 Nov 79 p 1] 9512

OIL FIELD RAILWAY--With the start of operations on the Surgut-Nizhnevartovsk line, the oil industry workers' city of Nizhnevartovsk and the nearby oil fields of the Samotlor oil deposit, the largest in the country, obtained a reliable transportation link with the mainland. The collectives of Tyumen's troypu't laid the railway to Samotlor under severe conditions. The line ran along the Ob' through flooded swamp-land and cut across dozens of streams, tributaries and ravines. In six years' time construction and installation trains No's 330 and 547, along with other units of Mintransstroy, saved 23 million rubles over the plan on this line. The track-laying brigade, headed by Hero of Socialist Labor V. Molozin, set a brisk pace here. Scheduled train traffic between Surgut and Nizhnevartovsk will begin January 15 according to the Ministry of Transportation's schedule. Builders of the line continue work on improving the trunkline's traffic-handling capacity and the organization of public services in the rail-workers' settlements. [Text] [Moscow STROITEL'NAYA GAZETA in Russian 9 Jan 80 p 1] 9512

COMPLETION OF "LITTLE BAM"--Tynda, Amurskaya Oblast--The Tynda-Berkakit railway has been put into permanent operation ahead of schedule. The builders, installation workers and track layers, having completed the final work in preparation for the start of operations, passed on the baton to the young rail workers of the All-Union Komsomol Shock Detachment. Scheduled high-capacity freight-train traffic has begun on the 220 km line. With the start of operations on the Tynda-Berkakit line the construction of the "Little BAM" is totally complete. From now on the 400 km steel rail will link reliably the Trans-Siberian mainline with the remote regions of Priamur'ye and Southern Yakutiya. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 29 Dec 79 p 1] 9512

FIRST ELECTRIC TRAIN--The first electric train has completed its test run on the Khabarovsk-Bira line. This 236-km long section of electrified track will be put into permanent operation after a high-voltage electric transmission line brings power from the Zeya GES. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 9 Jan 80 p 1] 9512

TYNDA-ZOLOTINKA POWER LINE--The electric power line which supplies power from the Zeya GES to the BAM projects has been lengthened by more than 100 km. The Tynda-Zolotinka high-voltage electric power line has been put into commercial operation. The new settlements, stations and industrial projects obtained current from the GES. The new electric power line has been run in alongside the railroad line. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 11 Jan 80 p 1] 9512

HIGH-POWER LOCOMOTIVES--Models of the high-power locomotives for the BAM were introduced at an exhibit that opened yesterday in Leningrad at the Institute for Railroad Transportation Engineers. In cooperation with production workers the researchers at the VUZ are working at creating original automated systems for traction engines and are solving the problem of train reliability under low-temperature conditions. [Text] [Riga SOVETSKAYA LATVIYA in Russian 11 Jan 80 p 1] 9512

POWER FROM ZEYA-YAKUTIYA--Yakutsk--The last towers have been installed on the Tynda-Serebryanyy Bor electric power line. Along this line power from the Zeya GES is beginning to be supplied to the builders of the Southern Yakutsk industrial complex. At the same time, the so-called "little BAM" railway has been put into permanent operation. The Berkakit-Tynda-Southern Yakutsk Territorial Industrial Complex railway is now linked by means of scheduled rail service along its 400-km length with the BAM (under construction) and with the operational Trans-Siberian Railway. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 10 Jan 80 p 4] 9512

DIESEL LOCOMOTIVE REPLACEMENTS--Novosibirsk--An important event took place on the Central Siberian trunkline of the Western Siberian Railway; electric trains left Central Siberian Station bound for Kamen'-on-Ob' and from Irtyshsk Station to Omsk in order to replace the diesel locomotives. Builders of the "Altaytransstroy" trust put in thousands of supports and foundations, built railway substations and hung thousands of kilometers of trolley wires so that there would be fewer "bottle-necks" in the important Siberian transportation artery in the concluding year of the 10th Five-Year Plan. [Excerpt] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 8 Feb 80 p 1] 9512

EQUIPMENT FOR BAM--The BAM Builders' first mechanized column was given a warm reception in the northernmost village of Zabaykal'ye-Chere. The movement of equipment to the main-line's Chitinskiy section has begun. [Text] [Moscow PRAVDA in Russian 6 Feb 80 p 6] 9512

FREIGHT TRAFFIC ORGANIZATION--Odessa--Each rail car now leaves the belt lines of enterprises in Odessa 36 minutes sooner than stipulated by the performance standards. This is the result of the work of an interdepartmental industrial rail transportation enterprise that has been created here. It has become the sole master of the belt lines, cars and engines and has consolidated the repair services and the maintenance engineer brigades, having concentrated in its hands everything that previously had been allotted to the transportation shops of various unions and plants. The new enterprise has become a singular "director" of the freight traffic. Now, customers need only take the information and draw up requisitions for the delivery of an empty train or freight cars to their warehouses. The rest is the business of the transportation engineers, who have the resources to effectively direct the forces and facilities that have been put at their disposal. [Text] [Moscow IZVESTIYA in Russian 20 Jan 80 p 1] 9512

CSO: 1829

SPECIFICATIONS, DESCRIPTION OF 'KAPITAN SMIRNOV'

Moscow MORSKOY FLOT in Russian No 11, 1979 pp 32-39

[Article by A. Yakovlev, supervisor of a group in Nikolayev inspecting the construction of ships for the Ministry of the Maritime Fleet, entitled: "The Gas-turbine Ship 'Kapitan Smirnov' "]

[Text] The largest roll-on-roll-off type of ship built in the Soviet Union - the gas-turbine ship "Kapitan Smirnov"- is intended for the transport of general cargo in large packages on pallets or without them, wheeled equipment including hollander trailers, automobiles and minibuses, 20- and 40-foot international standard containers(in the holds or on deck) including 100 units with refrigerated, dangerous, or explosive cargoes.

The "Kapitan Smirnov" is a twin screw, four-deck ship with the machinery space aft and living spaces in a superstructure above it. The ship has a bulbous bow, a transom stern, and minimum freeboard.

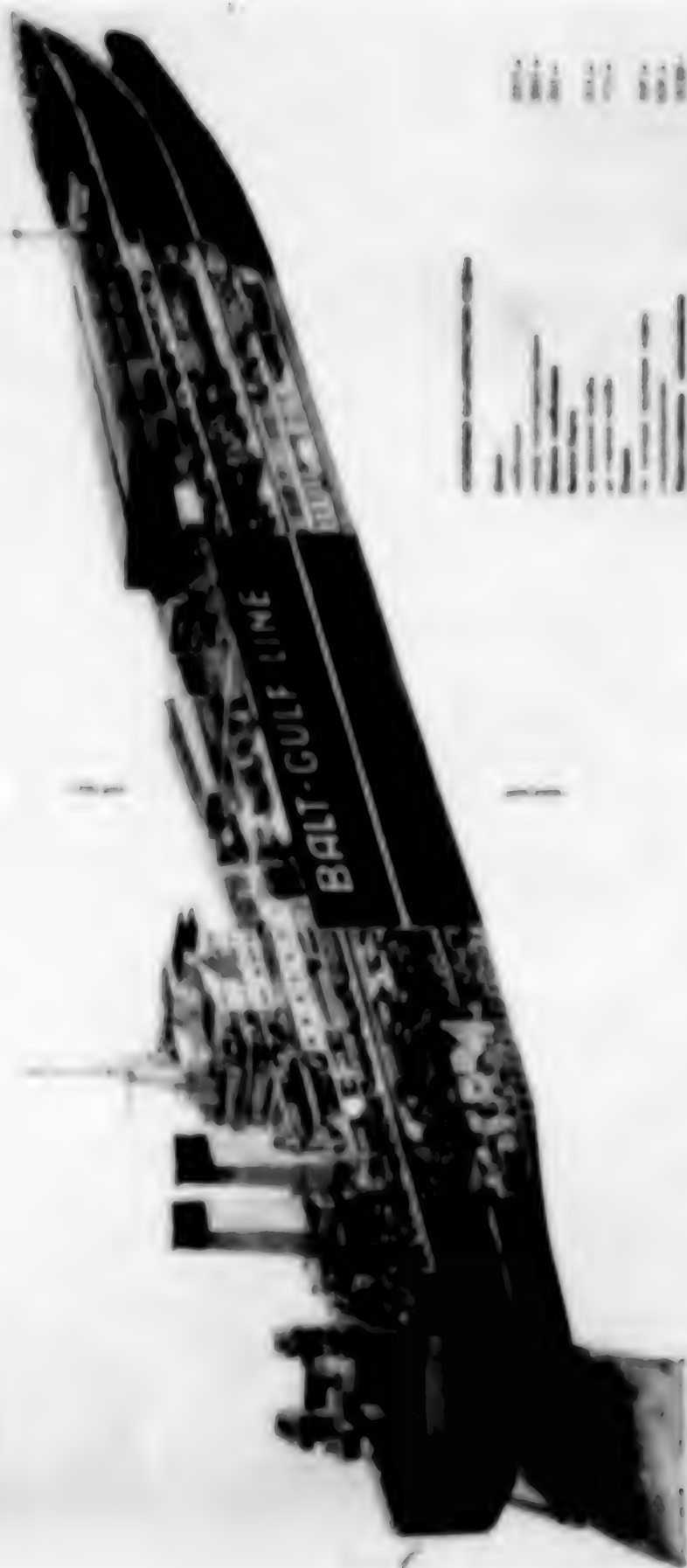
The decks divide the internal space of the hull along its length into three horizontal cargo compartments. Cargoes are accommodated on four decks and on the double bottom.

The ship was built to register of the USSR classification RML3A2 and satisfies the requirements of all the basic international laws and conventions.

The hull is made from carbon and low-alloy shipbuilding steels, and the propellers from high-strength bronze. The structures bounding potable water, settling, and service fuel tanks were made from two-layer corrosion resistant steel. The framing system is mixed.

A "Luga" cathodic system protects the hull from corrosion, and cathodic protection also is used in the ballast tanks. The ship has increased survivability because of double sides along the whole length of the holds from the tank top to the main deck. Unsinkability is assured with the flooding of one of the compartments of the bow extremity.

Stability is retained for all loadings as equipment is provided to verify it by a simplified inclining experiment before departure on a voyage.



Length	100.00 m
Breadth	12.00 m
Depth	5.00 m
Displacement	1,000 tons
Speed	15 knots
Range	1,000 miles
Armament	2 x 4.5 inch guns
Complement	100 crew
Builder	U.S. Navy
Commissioned	1945
Decommissioned	1960
Current status	Preserved

THE GAS TURBINE SHIP "CAPITAN SMIRNOV"

Principal Characteristics of the Ship

Length overall	227.3 meters
Length between perpendiculars	206.0 "
Beam overall	30.0 "
Height at side to upper deck	21.0 "
Height at side to main deck	11.3 "
Elevation of main deck above base line at loading ramp	11.7 "
Draft to summer load line	9.87 "
Specification draft	9.24 "
Maximum displacement	15,500 metric tons
Deadweight	20,270 " "
Cubic capacity of cargo holds	54,313 cubic meters
Main engine power at 130 RPM	2X25,000 horse power
Speed at full load	23 knots
Speed in ballast	26.7 knots
Endurance	20,000 miles

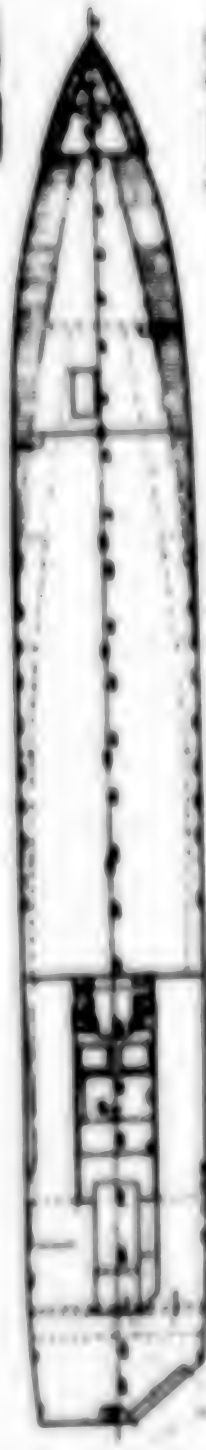
Cargo operations are accomplished by the horizontal method over the angled stern loading ramp and over fixed internal ramps having a 7-degree inclination. Besides this, there are 14 side conveyor-belt loaders made by the Finnish firm "Valmet". For their uninterrupted operation, there is an automatic anti-heeling system. It corrects any heel angle above 2 degrees that arises during loading operations. The system can be controlled either from the navigating bridge or from the cargo controller's station. The drafts of the ship at the bow, amidship (at the side), and at the stern are measured by a pneumatic system from the station for controlling cargo operations. The stern loading ramp has a width from 7 to 10.5 meters and the passageways along all the decks have a width of 7 meters.

For securing containers, there are recesses in the decks and rings. Eye-bolts are installed on the interior sides of the ship. The securing of automobiles on the suspended platform is accomplished with quick-clamping tie rods with a tensioning device which are attached to the perforations in the deck of the platform.

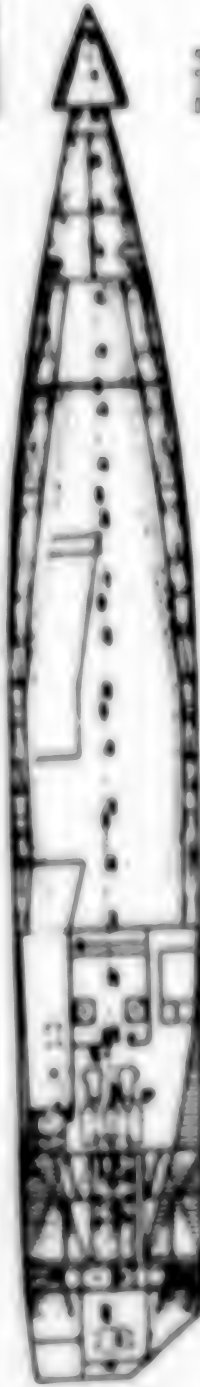
The angled stern ramp, made by the "Mak-Gregor/" firm, consists of three sections. The ramp is 38 meters long and weighs about 150 tons. It is raised and lowered by a cable system with special winches. It can be set down at various heights from 2.2 meters above, to 5.5 meters below the entrance deck. The construction of the ramp ensures its normal operation with the ship heeled up to 5 degrees or with a trim angle of 2 degrees. The ramp is designed for loading equipment weighing up to 65 tons with up to 59 tons on one axle.

The openings in the main and lower decks above the ramps have watertight covers. They are opened and closed by an electrohydraulic drive unit. The design of the covers allows for carrying two layers of 20- or 40-foot

Main Deck



Lower Deck



Ward



General Arrangement of
Officer's quarters

Side View



Plan View



Midship Section



containers on top of them and for the operation of loading equipment on them. The opening at the stern for the loading pump is closed by a watertight door which can be lifted up. In addition the ship has 5 watertight doors in bulkheads, and a closure at the entrance to the upper deck.

In the forward part of the ship, the upper and middle decks each have two cargo hatches which are closed by (five-section steel) hatch covers. Each section weighs not less than 10 tons. The hatch cover sections are installed by an on-shore crane.

Between the main and the middle deck is a 10-section movable, suspended platform for carrying automobiles. The steel platform sections are designed for a specific loading of 0.5 ton per wheel. The individual sections are raised and lowered by a hydraulic cylinder and steel cables. For driving automobiles on to the platform, the middle section on the right hand side has a special, movable ramp.

All cargo spaces have forced draft inlet and exhaust ventilation. The gas and air mixtures in the spaces are monitored at 40 points from the navigating bridge by a Swedish "Salviko" gas analyzing system. Upon a signal from this system indicating a gas content as high as 30% below an explosive mixture, electrical current to mechanisms within the cargo space is cut off.

The Anchor Gear. The ship has an Stal3-1 anchor winches, two 9-ton Hall anchors, and one spare anchor. Provision has been made for emergency dropping of the anchors at a speed of about 100 meters per minute, controlled from the bridge. At the local station and on the navigating bridge there are indicators of the length of chain let out.

The Steering Gear. There is an R-24 electrohydraulic steering engine with two pump units which has a nominal turning moment of 250 ton-meters. The "Alet" automatic steering system permits laying the semi-balanced rudder from side to side to angles of 35 degrees in 28 seconds. An emergency drive for the steering engine is situated above the bulkhead deck on the middle deck.

Thrusters. To improve maneuverability at slow speeds during passage through narrow, and in mooring, tunnel-type, 300-kilowatt thrusters are installed at the bow and the stern providing a total side thrust of 13 tons.

The Mooring Gear. Nine WS12.5 electric mooring winches manufactured by the Polish firm "Tovimor" with steel cables and automatic tensioning are installed. The nominal force of each winch is 12.5 tons.

Lifesaving Gear. The ship has two plastic, enclosed, motor life boats for 55 men each, and three pneumatic floats for 10 men each.

The Power Plant. The main engines on the ship are two M25 CGTA [M25 Main Gas Turbine Aggregates]. They are automated, fully variable, reversible

gas turbine units on the port and starboard sides, each turning its own 5,7-meter diameter and 7,4-meter pitch, propeller. The M25 main gas turbine unit is the first gas and steam plant to be realized in ship power plant construction having a unique system of reversing the gas turbine. This is accomplished by changing the direction of gas flow in the turbine which drives the propeller. The unit is distinguished from earlier built domestic and foreign gas turbine plants by a lower fuel consumption and by highly convenient maintenance because of the use of the unit repair technique. [The removal of a gas turbine to be repaired and its replacement with one already serviced.]

Using the "Rashat" DAI (remote control system), each main gas turbine unit can be controlled from the navigating bridge by one hand lever combined with the engine order telegraph. They also may be controlled from the TsPU (central control post) by two hand levers, one for the desired operating condition and one for reverse. The lever for the desired operating condition is connected by a light cable linkage to the actuating mechanism of the drive of the gas throttle quadrant, and the lever for reverse is combined with the responder of the engine order telegraph.

The M25 main gas turbine units have two modes of operation. There is the "Port" mode used in starting, passing through narrows or in mooring, and the "Sea" mode where the steam turbine is automatically engaged when the ahead speed of the ship requires more than half the nominal power of the GTD (gas turbine engine). The steam turbine is automatically disengaged during reverse.

From the control panel on the navigating bridge, two different commands may be given: "Stop" and "Stop Propeller". With the command "Stop", both the gas turbine and the propeller are stopped. With the command "Stop Propeller", the gas flow in the gas turbine is redistributed between the ahead and the astern turbines driving the propeller so that there is equilibrium of the forces on the shaft, and the propeller does not rotate while the gas turbine is running.

The gas turbine engine D159 consists of a turbocompressor and a turbine driving the propeller. The turbocompressor is made up of two axial-flow compressors (high and low pressure) driven by two independent turbines, and an annular combustion chamber consisting of 10 fire tubes arranged around the periphery along the axis of the engine, and enclosed in the common casing. The turbine driving the propeller consists of ahead and astern turbines not kinematically connected with the compressor.

The RD25 reducer is of the two-stage, non-reversing, geared type.

A heat-recovery and boiler installation, BIC 3100, with forced circulation and a capacity of 26,250 kilograms per hour, produces superheated steam from the heat in the exhaust gases from the gas turbine engine and delivers it to the steam turbine. There is a take-off of steam from the boiler for

the RTU 1000 turbo-generator and for ship's needs, the KUP 1100 steam boiler, a separator, an automatic control system, and a circulating pump are parts of the heat-recovery installation.

The PTU 2 steam turbine installation consists of the turbine and condenser. The turbine is of the impulse type with a single casing. It has one control stage with a two-row velocity wheel and seven pressure stages. The condenser is also the foundation for the turbine and the auxiliary equipment. The rotor of the turbine is connected to the reduction gear by means of a double-ended, toothed-disk-and-shroud, flexible shaft. The steam turbine has systems for control, overspeed protection, lubrication, and ring-gland packing. It also has shaft turning gear and an ROU moisture-reducing device with a regulating system. For creating and sustaining the necessary vacuum in the condenser, there is a two-stage ejector.

Monitoring of the components of the power plant and the auxiliary machinery is accomplished by a TsAK (centralized automatic monitor) "Shipka U-7". From the central control station, it permits the measurement (either continuously or at the demand of the watch officer) of the most important parameters at 211 points. It also initiates light or sound alarms when monitored parameters at 392 point depart from established values. It permits for 96 points, the recording of the fact of an overrunning of a parameter and its return to normal, and it automatically monitors its own good condition. The system sends light, sound, critical, and non-critical generalized signals to the cabins of the engineers, the navigating bridge, the wardroom, the mess hall, the officer's and crew's lounges and the machinery compartment. The system monitors the presence of the watch at the central control station and signals his absence over a period of 30 minutes.

When at anchor, and the gas turbine engines and the heat-recovery boiler are not working, steam is supplied by a KVVA 6/5, water-tube auxiliary boiler with a capacity of 6 tons per hour at 5 kilograms per square centimeter. Separation of diesel fuel and lubricating oil is accomplished by four Polish self-discharging, MARKH-207 separators with a "Rikorda" automated system. For the preparation of gas turbine fuel, there is an automatic installation made by the English "Penruolt" firm with a capacity of 10 tons per hour. There is also an English A-1600 electronic spectrophotometer for analyzing the vanadium content of the fuel.

The ship has a special high-pressure compressed air system consisting of two automated EKSA 7.5/4 electric compressors delivering 13 liters per minute at 200 kilograms per square centimeter, and eight air bottles. The system is used in the control of the gas turbine engines and reduction gear.

For starting the DGR 1000 diesel generator, for operating valves in the hull piping systems, for the operation of pneumatic instruments and other needs, there are two automated EKP 70/25M medium pressure, electric air compressors delivering 70 cubic meters per hour at 25 kilograms per square centimeter, and five air bottles.

The heat-recovery circuit of the main gas turbine units, the washing installation for the preparation of gas turbine fuel, and housekeeping needs are provided with fresh water by an MZ evaporating installation with a capacity of 60 tons per day and which operates with steam from the heat-recovery or the auxiliary boilers.

The refrigeration plant for the provision lockers consists of three MAK 9/P freon compressing and condensing units with a heat removal capacity of 9,000 kilocalories per hour. Automatic defrosting is provided by means of air coolers.

Fire Protection of the Ship. The water fire fighting system is for extinguishing fires in the living quarters and the machinery space, and for the sprinkler system of the middle 'tweendeck and the cargo deck above the machinery space. It is served by two NTsV 220/100A electric centrifugal pumps and one NTsV 100/100 emergency electric pump powered by the emergency diesel generator. For fire extinguishing by smothering, a liquid (chemical) fire extinguishing system is provided, with the start up of which, the crew is warned by light and sound signals in the machinery space and by blinking lights in the cargo compartments. Local sources of fire as in the heat-recovery boilers, the mufflers of the auxiliary or emergency diesel generators, the smoke pipes of boilers or the fuel tanks of cargo loading machines, can be extinguished with the steam, and in the machinery space, with the use of stationary equipment delivering high-expansion foam. For extinguishing fire in the compartments of the ADC (emergency diesel generator) and the paint storage or in the gas duct housings of the gas turbine engine, local carbon dioxide fire extinguishing installations are provided. The ship also has a high-expansion foam fire extinguishing system. For fire detection, two TOL-10/10S stations are installed on the navigating bridge which monitor all of the ship's compartments and holds. In addition, at those places in the machinery space where there is greatest danger of fire, smoke detectors are installed which send their signals to the central control station.

The Drainage System. This is served by two NTsV 250/30A electric, self-priming, centrifugal pumps and one ENF25/2.5 piston pump. An SK-10 separator removes petroleum products from machinery space bilge water. Monitoring of the oil content of overboard discharges of water is done with a "Salviko" model VOM system which operates valves for diverting polluted water discharges into a tank (instead of overboard) when the oil content is more than allowed. A system is provided for delivering bilge and sewage water to a collector or to treatment facilities on shore.

The Ballast System. The two NTsV 250/30A electric pumps of the drainage system are also used to remove ballast through the ballast distribution line (BRL) which is connected to the tanks through remotely controlled valves. The ship has two passages running along the sides from the machinery space to the bow. In them are the piping and remotely controlled valves of the ball piping systems and also, a monorail with a hoist. The emergency control for the valves in the ballast distribution line is in the starboard passage.

The Electrical Plant. In its make-up are three MSK 1250-750, three-phase, alternating current generators delivering 1250 kilovolt amperes at 400 volts and 50 hertz which are driven by 1500 horse power, 750 RPM, 6ChN 30/38 (5D242), four-cycle, turbocharged diesel engines. Also in the plant are two MSK 1560-1500, three-phase, alternating current generators delivering 1560 kilovolt amperes at 400 volts and 50 hertz which are driven by heat-recovery steam turbines. As an emergency source of electric power, there is an MSK-103-4, three-phase, alternating current generator delivering 250 kilovolt amperes at 400 volts and 50 hertz which is driven by a 300 horse power, 1500 RPM, 12Ch 15/18 (1D12V-00) diesel engine.

The Integrated Automation System. For the comprehensive automation of the processes of ship operation, navigation, and the solution of general operational problems, a "Bris 1609" system is installed on the ship. This permits increasing the average operational speed of the ship, shortening the time for cargo operations, and improving the safety of navigation and the competitive capabilities of the ship. It also permits taking into account more fully all external and internal information concerning the ship and reducing it to a generalized form easily grasped by ship operators.

The "Bris-1609" system includes radar, navigation, and computing modules and a system of hydroacoustic logs.

The radar module, NRIS "Bris", is intended to increase the safety of navigating the ship on the open sea, near shore, in narrow straits, and in conditions of limited visibility.

The navigation module, "Bris-N", automatically solves the problems of navigation, course indication, speed determination, the distance run, and reckoning and laying out the route on a chart.

The information and computing module, "Bris-I", was created on the basis of a computer. The radar and navigation modules can work with it. In different parts of the ship, on all cargo decks, receptacles are provided for the connection of portable pul'tov tal'manov [computer terminals?] with which information on the progress of loading or unloading is sent to the panel for cargo operations or to the input of data in the computer.

The "Omega" system of hydroacoustic logs is for determining the absolute speed of the ship.

The hardware of the "Bris" system was made taking into account convenience in use and maintenance. Microelectronics are widely used in it. Hardware and program redundancy are provided for the solution of more difficult problems. Non-interaction of the basic modules is assured.

Special attention has been given to monitoring and diagnosis of malfunction. The ship operator can check the fitness of the apparatus for work and can expose troubles without the use of supplementary, auxiliary hardware.



Radio Equipment. The equipment for radio communication and radio navigation on the ship was determined by the conditions for assuring safety of navigation at sea in accordance with the requirements of the Convention Rules for the equipping of seagoing ships.

The Living and Service Compartments. There are 13 cabins for the officers, 22 single cabins for the crew, and 4 double cabins for trainees or passengers. There are also a gymnasium, a pool, an open sports area, a photo laboratory, and a hobby shop. A passenger and freight elevator is provided for connecting compartments in the superstructure with the machinery space, and also for connecting the provision lockers, the galley, the crew's mess, and the wardroom.

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SLAVYANKA SHIP REPAIR PLANT

Application of New Technology

Moscow VODNYI TRANSPORT in Russian 3 Apr 80 p 2

[Article: "In an Alliance With Scientists"]

[Text] One of the very important conditions conducive to achievement of high production indicators by the plant's work force is the constant work being done by the management, public organizations, and engineering and technical personnel to speed up the pace of development of scientific-technical progress at the enterprise. The introduction of new equipment, progressive manufacturing processes and scientific management are the main lines of this fruitful activity.

Soyuzmorniprojekt [State Planning, Design and Scientific Research Institute of Maritime Transportation of the USSR Ministry of Maritime Fleet] and Dal'morniprojekt [Far Eastern Planning, Design and Scientific Research Institute of Maritime Transportation], the Electric Welding Institute imeni Ye. O. Paton and the Khabarovsk Electrical Equipment Design Institute, the Far Eastern Technical Institute of the Fish Industry and Fisheries and the Far Eastern Polytechnical Institute imeni V. V. Kuybyshev, and the Far Eastern Higher Maritime Engineering School--this is far from a complete list of the scientific organizations and institutions helping the ship repair workers of Slavyanka to attain design output on production capacities, to achieve higher indicators in their work, and to improve efficiency in ship repair.

For example, the rotary moisture and oil separator created with the help of specialists of the Far Eastern Polytechnical Institute yielded a savings of 20,000 rubles and ensured high quality of the compressed air and reliable operation of pneumatic machinery. Scientists of the department of metallurgy and heat treatment helped the enterprise in mastering steel casting in induction furnaces and the rebabbitting of bearings on the internal combustion engine of ships of the Mariya Savina type. The staff of the chair of welding took an active part in developing and creating a device for facing blowtorches with a strip electrode for welding in an argon medium, a

device for plasma metal cutting and other manufacturing processes. Together they yielded a saving of 24,000 rubles.

In close contact with staff scientists of the Far Eastern Higher Maritime Engineering School and Dal'rybvtus (Far Eastern Technical Institute of the Fish Industry and Fisheries) an attachment was manufactured at the plant and put into production for finish-strengthening of crankhead pins, piston rods and other parts of main and auxiliary engines. Last year a total of 99 measures embodying new technology were applied, yielding a saving of 242,400 rubles.

A great deal of serious work is being done at the plant toward technological revamping of design documentation, to introduce intraministerial cooperation and to improve the activity of the plant's computer center. Unified systems of technological documentation, of protection against corrosion and aging, and of workplace safety are already being prepared for practical use. About 100 enterprise standards, 50 state standards and 40 industrywide standards have been put into practice. Moreover, adherence to them is being checked constantly, and they are being corrected as a function of the requirements of production. In 1979 alone 24 enterprise standards were verified. It is also extremely important that all this work is aimed at solving problems related to further improvement of the quality of the product produced.

Report on Fulfillment of Plan

Moscow VODNIY TRANSPORT in Russian 3 Apr 80 p 2

[Text] Fifty years ago construction of a ship repair plant and worker settlement began on the shores of Slavyanka Bay. In 1970 the Slavyanka Ship Repair Plant went into operation.

It is now a modern enterprise capable of performing complicated engineering tasks in performance of ship repairs. It has mastered construction of a new specialized fleet capable of unloading transport ships onto an undeveloped shore.

Implementing the historical decisions of the 25th CPSU Congress, the work force of the Slavyanka Ship Repair Plant has achieved significant success in the work of performing the tasks assigned it. On the basis of widely organized socialist competition to raise operating efficiency and improve the quality of performance, to speed up scientific-technical progress and to tighten the economy in use of labor and the physical resources, the workers of the enterprise fulfilled the plan and socialist obligations for 1979 and the assignments for 4 years of the 5-year plan.

The ship repair workers overfulfilled by 526,000 rubles the target for 4 years of the 5-year output plan in terms of the net value of processing. The entire additional volume of output over and above the plan was achieved by raising labor productivity. Moreover, during all 4 years the plant successfully fulfilled assignments for all products on the specified list. Above-plan profit earned in the 4 years amounted to 753,000 rubles.

The self-sacrificing labor of the ship repair workers is beautifully illustrated by figures on the work force's fulfillment of principal technical-and-economic indicators (see the table).

	For the Re- porting Year 1979, % of plan ful- fillment	Fulfillment of Assignments of 5-Year Plan From Beginning of 10th Five-Year Plan, index number
1. Output in terms of net value of processing	100.8	101.1
2. Volume of sales including performance of deliveries and business contracts	100.0	100.0
3. Profit	103.8	103.3
4. Total profitability	+0.18	+0.39
5. Output of the most important products:		
a) Ship repairs in terms of the net value of processing	104.6	100.5
b) Delivery of ships from the shipyard	100.0	108.3
6. Labor productivity	101.1	102.4
7. Average wage including payments from the material incentive fund	101.1	101.8
8. Wage fund adjusted to the percentage of plan fulfillment in terms of the net value of processing	98.6	98.6
9. Fulfillment of quotas for average daily output in ship repairs	+8.0	+6.0

Output in terms of the net value of processing per ruble of average annual value of productive capital rose 0.19 percent over the planned target for 1979. Quotas for the average daily output in ship repairs were met at a level of 108 percent. This meant a saving of 454 ship-days of repair time.

A great deal of work is being done at the plant toward optimum and thrifty use of materials and energy. In the past year the following savings have been achieved: 111 tons of ferrous metals, 492,000 kilowatt-hours of electric power and 1,161 gigacalories of thermal energy.

Much attention is being paid by the enterprise's staff to improving the organization of production and management, to introduction of the progressive know-how of production innovators and progressive forms of organization of work. The activity of mixed teams and consolidated mixed teams has become widespread in production. Thanks to introduction of measures embodying new technology, scientific management, and organizational and technical measures an economic benefit amounting to 248,000 rubles was achieved in 1979. Another 122,000 rubles were saved by practical application of proposals of production innovators.

Another characteristic feature of the fourth year of the 10th Five-Year Plan at the Slavyanka Ship Repair Plant was successful fulfillment of the plan for the social development of the work force. Three shops were built with comfortable employee facilities, and two apartment houses were built with a total floor space of 10,882 square meters. A great deal of work is being done at the plant to improve workplace health and safety. In 1979 organizational and technical measures costing 585,500 rubles were carried out to make working conditions healthier.

The notable production achievements of the plant's workers are closely bound up with their active support of their creative initiative by party, trade union and Komsomol organizations and the rise in the level of ideological and political-education efforts.

Elsewhere on this page there is information about the operating forms and methods of the work force of the Slavyanka Ship Repair Plant and the ways it achieved high production indicators.

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OCEAN AND RIVER

BRIDGE OPENING RESUMES IN LENINGRAD

Leningrad LENINGRADSKAYA PRAVDA in Russian 6 Apr 80 p 4

[Article by Yu. Leonidov: "The First Drawing of the Dvortsovyi"]

[Text] Winter is behind. Spring has come, and again the Leningrad bridges are coming back to life. Little time was allotted to the bridge workers to put this entire complicated system into order.

After all, the last ship of the 1979 navigation passed through the Neva only in later December, while on 27 March the Bol'sheokhtinskiy Bridge tested its strength, then all the other Neva crossings did a "workout"--it depended only on the Dvortsovyi Bridge, where the next stage of its renovation was carried out during the winter. But then last night it flapped its leaf spans, letting through the first ship of the 1980 navigation.

"In the little more than three months, which we had available," says Lennostrest Manager E. I. Kipriyanov, "at the same time as the necessary preventive maintenance of the drawing mechanism, the checking of the electrical systems and the cosmetic repair of the equipment our specialists performed serious work on three major bridges. A standby electric power supply generator was installed on the Bol'sheokhtinskiy Bridge, the overhauling of the hydraulic pumps was performed on the Tuchkovy Bridge--these measures make it possible to ensure the stability of the drawing operations.

"But the main work was performed on the Dvortsovyi Bridge--the repair of the old machinery was continued: we have now replaced the bearings and shafts on the balance weights of one of the swing piers."

At the same time as repairing the equipment the brigades of Lennostrest carried out the sandblasting cosmetic repair of the granite facing stone of the bridges and embankments, put the asphalt surface of their roadway and walkways into order and installed ship signalling and beacons.

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OCEAN AND RIVER

NORTHWEST RIVER OPENING LINKS LENINGRAD WITH VOLGA RIVER PORTS

Leningrad LENINGRADSKAYA PRAVDA in Russian 6 Apr 80 p 4

[Article by M. Tarasov: "Via the Neva to Ladoga"]

[Text] The icebreaker "Kapitan Zarubin" was the first of the ships of the Northwestern River Steamship Company, which last night passed under the Leningrad bridges. It has much work ahead.

The icebreaker has to open the Neva, for it has been cleared of ice only within the boundaries of the city, while upstream at present it is still holding on. There is also solid unbroken ice on Lake Ladoga, in some regions of which its thickness reaches more than 80 cm. After Ladoga the "Kapitan Zarubin," having traveled over the Svir' and through the locks, will come out into Lake Onega. After breaking up the ice here, the icebreaker will set out along the Volga-Baltic Canal: from Vytegra to Cherepovets.

"Owing to the specialized powerful icebreaker," relates Deputy Chief of the Northwestern River Steamship Company G. A. Vasil'yev, "the current navigation will open very soon. During the second half of April the first ships with mineral and construction cargoes from the quarries of the oblast will arrive in Leningrad. Then the traffic along the Volga-Baltic Canal will also be opened. The dry cargo ship 'Baltiyskiy-104' will be the first of the combined 'river-sea' ships to leave Leningrad for the Caspian. The early start of the navigation and its planned later conclusion will enable us to haul 3 million tons of cargo more than last year."

Before Victory Day it is also planned to open passenger navigation. This year it is special, Olympic navigation. To serve the guests of the 1980 Olympics on the Leningrad-Petrodvorets and the Decembrist Square-Central Park of Culture and Rest named S. M. Kirov lines and others the fleet of the steamship company will be supplemented by the new ships the "Zarya" and the "Meteor." This year the Northwestern River Steamship Company will also receive another four-deck passenger motorship of the same type as the flagship of the steamship company--the "Vladimir Il'ich." It will link Leningrad with Volga River ports.

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CSO: 1829

MISCELLANEOUS

IMPORTANCE OF HORSES IN NORTHERN ASPEN STRESSED

Moscow IZVESTIYA in Russian 28 Mar 80 p 2

[Article by A. Poleshayev, director of the Politotdelet Sovkhoz, Vologodskaya Oblast: "One Horsepower"]

[Text] I recently witnessed the following scene. A very unattractive horse was harnessed to a sleigh and standing at the edge of a forest settlement. It was surrounded by a group of youngsters who pressed hard against each other in an effort to obtain a better view.

Meanwhile, off in the distance the smart looking Zhiguli and Moskvich vehicles sparkled as they rushed along the concrete highway and one could hear the rumbling of the powerful KamAZ trucks, the hoods of which concealed tens and hundreds of horsepower. But the children displayed no interest in the motor vehicles: both the youth and the adults as well are accustomed to seeing the machines. These mechanical forces are accepted today as being nothing more than the consequence of industrial development throughout the country and even throughout the world. Gasoline is poured into the tank and the ignition key turned -- and thereafter one can drive to his heart's content over the asphalt.

Yes, over the asphalt... But an automobile does not move as friskily along a country road. The Zhiguli vehicles must be towed over a forest road during the season of bad roads. One must transfer to a Uazik or Niva, which have 4-wheel drives. But more often than not a tractor is required. Nor is a K-700 able to pass through in all areas, or especially along our forest side.

At the same time, ordinary horses (we do not have elite ones, only village horses) are able to reach a distant brigade camp, somewhere beyond a lake and near a swamp or small village, to which point asphalt roads still do not reach, nor are they expected to in the near future. And the horses deliver various items to this point: milk, goods required for a store, latest newspapers, magazines, television expert or an inspector for a domestic services combine.

Certainly, a helicopter could be rented: it is said that we are now rich and that the farms have much money in their accounts. But is it wise to employ hundreds of horsepower there when one will suffice, a horsepower which was created by nature and which is reliable and thrifty?

Mention should be made concerning the economic aspects of the problem. At the present time, the possibility of replacing the principal tractive machines in agriculture with horses is unthinkable.

Nevertheless, horses are still necessary. Take our sovkhos for example -- 3,000 head of cattle and only 60 horses. The horses consume 2 percent of the feed supplies. Yet, great use is obtained from the. Each summer we saddle up 35 shepherds. This means that the herds are becoming more mobile, the pastures are being used more completely and they are being trampled down to a lesser degree and in the final analysis the cattle are producing noticeably greater quantities of milk and meat. In the winter the horses participate in the work of hauling farmyard manure out onto the fields, procuring firewood and transporting feed to the farms during the season of bad roads. They are of great help to our 92 tractors and 66 motor vehicles. Even more important is the fact that although they do not substitute for the equipment used in the principal operations, nevertheless the horses are irreplaceable in those areas where neither wheels nor caterpillar tracks can pass.

And if we are discussing feed, then is it not true that for every 10 times that he swings his scythe, a shepherd presents an armful of fresh grass to his horse? Or a small stack of hay during the winter. And the youth and admirers of nighttime activities find quite a bit. It is a type of enchantment -- to sit before a camp fire of a summer evening?

There are many farms in our almost inaccessible Vologodskaya Oblast on which the roads are considerably worse than is the case at our suburban sovkhos. The roads of our neighbors -- Arkhangel'skaya Oblast and the Komi ASSR -- are even more complicated. Yes and is there anybody who would maintain that the roads in the nonchernozem zone are exceptional? It would seem also that there should be a greater number of horses and yet this unfortunately is not the case. The number of horses is decreasing with each passing year. For some reason, the planning organs are not paying attention to this fact. The leaders of many farms have lost interest in their horses. The quality of the zootechnical work has fallen. And although 80 calves are being obtained annually from every 100 cows in the oblast, only 17 colts are being foaled from 100 mares. Moreover, the figures are even lower on many farms.

By no means do all of the young agronomists and zootechnicians venture forth on horseback. Rather, they request the use of a heavy-duty motorcycle or a cross-country vehicle. One can easily understand why. It is recalled that not too long ago the animal husbandry faculties at agricultural VUZ's and technical schools conducted a special examination on the breeding of horses

and they gave instructions on the harnessing of horses. Such an examination is no longer being given. Moreover, the possibility for doing so is limited anymore. Moreover, the situation in agriculture with regard to the availability of harnessing gear, sledges and wagons is critical. The experienced harness and saddle makers have grown old and no new ones are undergoing training at any of the rural professional-technical schools. And there are few who are aware as to which works should be fitted out with equipment. For example, there is our smart Vologda troika, used for driving guests to the VDNKh (Exhibition of Achievements of the National Economy of the USSR).

Today only a few horses are to be found on the private plots. A limitation which was imposed long ago still prevails in this regard. And the question is often asked as to why rural residents are not permitted to acquire a horse, or at least a colt, a practice which is permitted in Kazakhstan and in the central Asian republics. There would be those who would relish the idea of maintaining a horse on their private plots, together with a cow and poultry.

I held discussions with others. Although not everyone, nevertheless there were many who maintained horses. At least they said they did.

And there are many advantages to doing so: plowing one's own private plot and cooperating with and assisting a neighbor. To transport farmyard manure for fertilization purposes and firewood from the forest. Indeed, they are already adapting motorcycles for carrying out this work on the private plots.

Understandably, it will be necessary to organize the long-forgotten production of horse-drawn plows (today it is impossible to find them anywhere), light-weight harrows, cultivators and wagons.

One horsepower. Its importance is considerably greater than I have outlined it in this article. It was by no means an accident that my story began with school children clustering around an ordinary rural horse. This century, characterized as it is by equipment, tends to limit the opportunities for communicating with live nature. Yet this is very necessary for man.

At the Cherepovets Hippodrome, which is located along the border of our sovkhos, a children's-youth sports section has been created. There is no end to the number of individuals wishing to participate in the work of this section. The strict trainers are accepting only the most diligent individuals, those who have faultless school records. Yet how many adult spectators gather at the hippodrome on a day that trotting races are scheduled to take place? A festive spirit flourishes in one's heart upon seeing a trotting horse, a smart looking troika or, certainly, an ordinary country horse.

Thus, it is still too early to relegate to the archives this ancient friend of man -- the horse, which has traveled a long road with him, from ancient

times to the heights of civilization. In all aspects, the horse is still quite useful.

Thus, let us ponder together the best methods for raising horse-breeding to a new level throughout the country and increasing the efficiency factor for one live horsepower.

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MISCELLANEOUS

BRIEFS

SUITABILITY OF OLDER IMPLEMENTS--Lempikha, Permskaya Oblast--It would seem inappropriate at this time to even mention horse-drawn mowers, scythes and sickles. However, in some instances they are still suitable for use at kolkhozes and sovkhozes. For example, let us assume that grain crops have lodged on certain tracts. Although a combine can do nothing, a horse-drawn mower could harvest the tracts. And on small distant fields and meadows, where considerable difficulty would be encountered in attempting to deliver the usual equipment, these implements could prove to be very suitable. Unfortunately, very few farms have these implements at their disposal and very few horses remain in the villages. Yet this represents a reserve which would be of great assistance in reducing losses. [Text] [Moscow TRUD in Russian 3 Apr 80 p 2] 7026

HORSESHOES REQUIRED--Irbitskiy Rayon, Sverdlovskaya Oblast--A business trip which I made to Irbitskiy Rayon left me feeling somewhat depressed. I still recall a rather sad picture: a woman was attempting to raise a horse which was lying on a road. She was having no success. She glanced at the sledge containing bags of flour. The 1st Brigade of the Kolkhoz imeni Chapayev was waiting for the flour to be delivered. What was to be done? We left our vehicle and furnished assistance in freeing the horse from its harnessing. It stood up with difficulty and thereafter cautiously, in the manner of a child learning how to walk, it began moving towards a cuvette. Along the way we visited the central farmstead of the Kolkhoz imeni Chapayev and its chairman, Aleksandr Nikolayevich Rybukhin. We related the incident to him. He merely sighed sadly in response. It turns out that his kolkhoz is not the only one affected by such incidents. The problem has to do with the horseshoes and nails. The neighboring farms are also unable to procure horseshoes. Thus the animals are tormented and the farms suffer. Although the modern equipment is wonderful, horses are still required in the rural areas. Thus the farms must be supplied with horseshoes and nails and good high quality harnessing gear must be produced. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 28 Mar 80 p 3] 7026

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END

SELECTIVE LIST OF JPRS SERIAL REPORTS

USSR SERIAL REPORTS (GENERAL)

USSR REPORT: Agriculture
USSR REPORT: Economic Affairs
USSR REPORT: Construction and Equipment
USSR REPORT: Military Affairs
USSR REPORT: Political and Sociological Affairs
USSR REPORT: Energy
USSR REPORT: International Economic Relations
USSR REPORT: Consumer Goods and Domestic Trade
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USSR REPORT: SOCIOLOGICAL STUDIES*
USSR REPORT: USA: ECONOMICS, POLITICS, IDEOLOGY*

USSR SERIAL REPORTS (SCIENTIFIC AND TECHNICAL)

USSR REPORT: Life Sciences: Biomedical and Behavioral Sciences
USSR REPORT: Life Sciences: Effects of Nonionizing Electromagnetic Radiation
USSR REPORT: Life Sciences: Agrotechnology and Food Resources
USSR REPORT: Chemistry
USSR REPORT: Cybernetics, Computers and Automation Technology
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USSR REPORT: Physics and Mathematics
USSR REPORT: SPACE BIOLOGY AND AEROSPACE MEDICINE*

WORLDWIDE SERIAL REPORTS

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WORLDWIDE REPORT: Epidemiology
WORLDWIDE REPORT: Law of the Sea
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